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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,642	09/12/2003	Masaru Honda	Q77371	7035

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EXAMINER

QI, ZHI QIANG

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.: 10/660,642	Applicant(s) HONDA ET AL.	
	Examiner Mike Qi	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 12, 13 and 17-34 is/are pending in the application.
- 4a) Of the above claim(s) 12, 13, 17-21 and 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/809,259.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/12/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 12-13,17-21,27-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected, there being no allowable generic or linking claim. Election was made **without** traverse on May 18, 2004.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,327,088 (Iwata et al).

Claim 7, Iwata discloses (col.5, line 55 – col.7, line 3; col.13, line 40 – col.17, line 25; Figs.1-4) that the light diffusing (scattering) layer (18) is sandwiched by the adhesive layer (34) and the substrate (12), and the material of the adhesive layer (34) can be made of resin (such as col.10, lines 42 – 45, described that the light transmissive resin act as an adhesive layer, so that the material of the adhesive layer can be resin), and the material of the substrate (12) also can be transparent resin film (such as col.6, lines 53-55, described that the transparent film substrate includes transparent resin film); and the light diffusing (scattering) layer (18) comprising a light transmissive resin (scattering resin) (16) containing a light transmissive diffusing material (colorless transparent spherical particles) (14), wherein:

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- the transparent resin film (scattering resin), ordinarily, having a thickness of 25-1000 μm , and the thickness would affect the transmittance, displaying image must have more than 85% of transmittance, so as to obtaining a desired thickness such as 1-100 μm (col.6, lines 56-64);
- the haze value of the light diffusing (scattering) film is 0.7 (70%) or less, so that the resulting panel gives an excellent display quality (col.14, lines 16-24);
- the difference between the refractive index Δn ($n(R) - n(F)$) of the refractive index of the light transmittance resin (16) (refractive index $n(R)$ of colorless transparent resin) and the refractive index of light transmissive diffusing material (14) (a refractive index $n(F)$ of the colorless transparent spherical particles) satisfy: $0.01 \leq \Delta n \leq 0.5$ (col.6, lines 14-23);
- the average particle diameter d of the diffusing material (the average particle size Φ of the colorless transparent spherical particles) satisfies: $0.1 \mu\text{m} \leq d \leq 5 \mu\text{m}$ (col.6, lines 14-23);
- the weight parts of the beads (a content of the colorless transparent spherical particles) such as the "example 1" is 1.11 (in TABLE 2) and the weight parts of the resin (the colorless transparent resin) is 100 (col.14, lines 63-64).

Although Iwata does not explicitly disclose exactly same as the limitations as claimed such as the difference between a refractive index $n(R)$ of the colorless transparent resin and a refractive index $n(F)$ of the colorless transparent spherical particles satisfy: $0.00 \leq \Delta n \leq 0.05$, but Iwata discloses a range of $0.01 \leq \Delta n \leq 0.5$, that the one skilled in the art would based on the Iwata's disclosure to find more precise

range, so as to obtain a clear and less blurred display and uniform independent of visual angles (col.6, lines 14-46), and in the case where the claimed range "overlap or lie inside ranges disclosed by prior art" a prima facie case of obviousness exists (see MPEP 2144.05.I).

Although Iwata does not expressly disclose exactly same as the limitations as claimed such as the haze Hz satisfying: $50\% \leq Hz \leq 90\%$, but Iwata disclosed (col.14, lines 16-24) that the haze value of the light diffusing (scattering) film is 0.7 (70%) or less, so that the resulting panel gives an excellent display quality, and in the case where the claimed range "overlap or lie inside ranges disclosed by prior art" a prima facie case of obviousness exists (see MPEP 2144.05.I).

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to form the scattering sheet comprising a colorless transparent resin and colorless transparent spherical particles as claimed in claim 7 for achieving a clear and less blurred display and uniform independent of visual angles.

Claim 22, Iwata discloses (col.13, line 40 – col.15, line 2) that the weight part of the diffusing material (the content of the colorless transparent spherical particles) such as the "example 8" (in TABLE 4) is 30 and the weight part of the resin (the colorless transparent resin) is 100.

3. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata as applied to claims 7 and 22 above, and further in view of JP 7-216328 (Shuji et al).

Claims 23-24, lacking limitation is such that the colorless transparent resin is an acrylic pressure-sensitive adhesive having certain refractive index.

However, Shuji discloses (abstracts) that using acrylic pressure-sensitive adhesive resin mixing with resin particles to form a light-diffusing composition (light scattering sheet) so as to obtain a surface illuminant of high luminance. The refractive index is a property of the material such as the colorless transparent resin using a material of acrylic pressure-sensitive adhesive, so that the refractive index n (R) is about 1.4 to 1.5 that would be the property of the material of the acrylic pressure-sensitive adhesive resin.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use acrylic pressure-sensitive adhesive resin as the colorless transparent resin as claimed in claims 23-24 for achieving a surface illuminant of high luminance.

4. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata as applied to claims 7 and 22 above, and further in view of US 6,348,960 (Etori et al).

Claim 25, lacking limitation is such that the colorless transparent spherical particles are made of a silicone resin.

However, Etori discloses (col.3, line 66 – col.4, line 5) that the spherical microparticles, the organic microparticles such as silicone resin are preferably used, because spherical shape is more easily obtained with the silicone resin material.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use silicone resin as the material of the colorless transparent particles as claimed in claim 25 for obtaining the spherical shape more easily.

Claim 26, the phase retardation value is determined from the refractive index difference and the thickness of the material, so that a certain scattering sheet would have a certain retardation value, and that would be the property of the material of the scattering sheet. Therefore, certain material would determine the phase retardation value of the scattering sheet as claimed in claim 26, and that would have been at least obvious.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299.

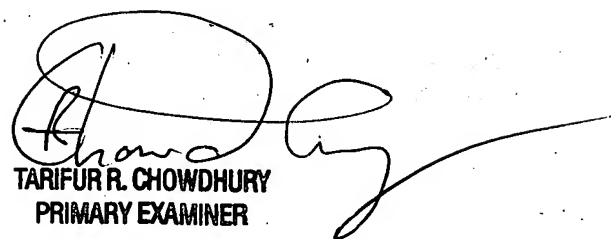
The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi
May 26, 2004



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER